

ON THE ELEVATION OF THE *STEPHANOPHYLLIA*
SUBGENUS *LETEPSAMMIA* TO GENERIC RANK
(COELENTERATA: SCLERACTINIA: MICRABACIIDAE)

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Abstract.—The differentiating macrostructural and microstructural characteristics of the subgenus *Letepsammia* Yabe and Eguchi are described, and the subgenus is officially elevated to the taxonomic rank of genus. *Letepsammia* differs most significantly from *Stephanophyllia* and other genera of the Micrabaciidae in its numerous coarse perforations in all septa, and its slender, wavy, and irregularly spaced trabeculae. Fossil specimens of *Letepsammia* are found in the Plio-Pleistocene of Japan, while living specimens have been retrieved from depths of less than 100 meters to nearly 1000 meters over a wide area of the Pacific and Indian Oceans.

Letepsammia was described as a subgenus by Yabe and Eguchi in 1932, primarily on the basis of the well-developed, spongy columella in *S. formosissima* Moseley, the type species. Although they acknowledged differences in septal perforations between *Letepsammia* and the other subgenera of *Stephanophyllia*, they evidently did not consider these septal differences to be of generic significance. Similarly, Vaughan and Wells (1943) and Wells (1956) considered *Letepsammia* to be synonymous with *Stephanophyllia*. More recent authors, most notably Squires (1965, 1967), Keller (1977), Cairns (1982), and Owens (1984a, b, 1986), have tacitly accepted the septal and columellar differences as worthy of generic separation, and have informally recognized the subgenus as *Letepsammia*. A review of the literature, however, reveals that *Letepsammia* has never been officially elevated to generic status. This paper, therefore, is intended to do so.

Order SCLERACTINIA Bourne, 1900
Suborder FUNGIIDA Duncan, 1881
Superfamily FUNGIOIDEA Vaughan and
Wells, 1943

Family MICRABACIIDAE Vaughan, 1905
Genus *LETEPSAMMIA* Yabe and Eguchi,
1932

Stephanophyllia (*Letepsammia*) Yabe and
Eguchi, 1932:58.—Wells, 1933:51.—
Yabe and Eguchi, 1934:280–281, figs. 1–3.
Letepsammia Vaughan and Wells, 1943:
145.—Wells, 1956:F390.—Squires, 1965:
878; 1967:505–508.—Keller, 1977:41–
43.—Cairns, 1982:9.—Owens, 1984a:
519–521, fig. 4; 1984b:88, fig. 4; 1986:
248–255.

Diagnosis.—Corallum large, loosely built, with highly perforated septa and wall, well-developed deltas, and prominent marginal shelf. Wall horizontal or nearly so, very thin, with septa alternating in position with costae. Septa slender, with varied, complex dentation; interspaces wider than septa. Vepreculae inconspicuous or absent. Costae slender, serrated on outer edge, and separated by broad intercostal loculi interrupted by closely spaced, concentric rows of syntenticulae. Columella broad, spongy, and elongate. Trabeculae thin, wavy, poorly organized, ramified in some species along unperforated growing edge; 10–20 in number.

Low height : diameter ratio. Generally 120 septa.

Occurrence.—Plio-Pleistocene, Ryukyu Islands; Recent, Japan Sea, Celebes Sea, Banda Sea, Coral Sea, Philippine Islands, Hawaiian Islands, Australia, New Zealand, East African Coast. 50–960 meters.

Type species.—*Stephanophyllia formosissima* Moseley, 1881, by monotypy, by Yabe and Eguchi, 1932. Deposited in the British Museum (Natural History).

Taxa included.—*Letepsammia formosissima* Moseley, 1881, and *Letepsammia superstes* Ortman, 1888.

Discussion.—When Yabe and Eguchi (1932:58) established *Letepsammia*, they based it solely on their type of the subgenus, *S. (L.) formosissima*, and described the subgenus as follows:

“Skeletal elements very delicate. Columellar fossa distinct, deep; columella spongy, well developed. Septa usually and horizontal wall always coarsely perforated, being a network of slender trabeculae. Pores of the horizontal wall circular, coarser, and are easily distinguished from the smaller, elongate or oval perforations in the other subgenera . . .”

Later, Yabe and Eguchi (1934:280–281) included in this subgenus a fossil form from Japan, *S. (L.) japonica* nov. Although this form was subsequently determined to be a fossil representative of the living species *S. superstes*, it nonetheless proved the validity of perforated septa and spongy columella as identifying characters of their subgenus. Recently I acquired from the National Museum of Natural History a new, undescribed species that also has these characters. Nowhere else among the genera and subgenera of the Micrabaciidae are septa of both lower and higher cycles so highly and conspicuously perforate. On this basis, if on no other, recent authors of studies on the Micrabaciidae have informally recognized *Letepsammia* as a genus.

The diagnosis given earlier in this paper is intended to expand and emend Yabe and Eguchi's original description of their subgenus so as to incorporate other common characters of the species of that group that seem to be of generic significance.

Letepsammia, at present, contains two described species:

L. formosissima Moseley, 1881. Recent, Celebes, Banda, and Coral Seas, Philippine and Hawaiian Islands.

L. superstes Ortman, 1888. Plio-Pleistocene, Ryukyu Islands; Recent, Japan Sea.

Squires (1967:505) alluded to six species of letepsammid corals found in the Pacific and Indian Oceans. Undoubtedly, this number included the two described species, and probably also the new, undescribed species from the National Museum of Natural History; the remaining species to which he refers have not, to date, been either described or verified.

Although *Letepsammia* was originally assigned as a subgenus of *Stephanophyllia*, it bears only a superficial resemblance to that genus. The corallum in *Letepsammia* is relatively large and loosely built, with all septa highly perforated and adorned with prominent, complex dentation. In *Stephanophyllia*, the corallum is small-to-medium and generally quite compact; perforations are present, but they are restricted to the lower portions of higher cycle septa and are often sparsely and irregularly distributed. Septal edges are noticeably dentate, but the dentation is of the simple acute or lacerate type. The basal wall in *Letepsammia* is thin and generally projects as a prominent shelf, whereas it forms a rather tight rim in *Stephanophyllia* with little or no marginal shelf. In each case, the columella is elongate, but it is very porous in *Letepsammia*, lamellar in *Stephanophyllia*.

Septal microstructure also differs in the two genera. Trabeculae in *Stephanophyllia* are regularly spaced in a well-organized fan

system, with ends of the sclerodermites projecting laterally to form vepreculae along the flanks of each septum. In *Letepsammia*, the trabeculae are thin, wavy, irregularly spaced in a very loose fan, and are reduced in number. The sclerodermites rarely project beyond the plane of the septum, but when they do, they form only rudimentary vepreculae.

Superficially, *Letepsammia* does resemble *Stephanophyllia* in that both possess true deltas, dentate septa, and septal perforations to some degree. However, the differences between them far outweigh their similarities. These differences, moreover, are fundamental enough to warrant official elevation of *Letepsammia* to the rank of genus.

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